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FIBER AND PROCESSING TESTS SURVEY OF LEADING COTTON VARIETIES

CROP OF 1994



U. S. Department of Agriculture
Agricultural Marketing Service
Cotton Division

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FIBER AND PROCESSING TESTS
SURVEY OF LEADING COTTON VARIETIES
1994 COTTON CROP

INTRODUCTION

This report contains information on the fiber properties and spinning performance of cotton samples representing leading varieties commercially grown in the United States. The results of fiber and spinning tests on these samples provide data for studies of the relationships between fiber properties, processing performance and product quality, in reference to specific cotton varieties.

SAMPLING PROCEDURES

For this survey, a total of twenty-four upland and two American Pima bales representing leading cotton varieties were purchased. In each case, the owner certified that the bale was produced from a specific variety.

Two upland varieties were selected from the Southeastern Area of the United States, four varieties from the South Central Area, three from the Southwestern Area and three from the Western Area. In addition, one American Pima variety was selected from the Western Area. Two bales were obtained for each of the selected varieties.

Several sets of samples were taken from each bale for various fiber tests. Each set was composed of five samples taken at random across the "fanhead" of the bale. This means that each fiber statistic in this report, except for classer's color grade and classer's leaf grade, is the average of five readings. The classer's color grade and classer's leaf grade were based on a classer's sample of the bale and were assigned at the Cotton Division's Quality Control Section. The HVI tests were done by the Quality Control Section.

A minimum of 150 pounds of cotton from each bale was processed for each spinning test.

PROCESSING

The 26 bales of cotton collected for this study were processed on modern textile processing equipment. The cotton was opened, blended and cleaned on Truetzschler equipment and carded on a Truetzschler Card at 70 pounds per hour. Drawing sliver was produced on a Reiter Breaker Drawing Frame (3 over 3) and a Saco Lowell Finisher Drawing Frame (3 over 4). Roving was produced on a Saco Lowell Long Draft Roving Frame (10 x 5, 1-Apron Type), and ring spun yarn was produced on a Saco Lowell Long Draft Spinning Frame (2-Apron Type). Rotor spun yarn was produced on a Schlafhorst Autocoro Spinning Frame.

NOTE: Trade names are used solely to provide specific information. Mention of a trade name does not constitute a warranty or an endorsement of the product by the U. S. Department of Agriculture to the exclusion of other products not mentioned.

ACKNOWLEDGEMENT: Appreciation is expressed to C. K. Bragg and personnel of the Cotton Quality Research Station, ARS, U. S. Department of Agriculture, Clemson, SC for making the fiber tests except for HVI, processing the cotton into yarn and making the yarn tests.

Fiber and Processing Tests of Leading Cotton Varieties - 1994 Cotton Crop - Fiber Properties.

| | DELTAPINE PAYMASTER HS 26 | | DELTAPINE PAYMASTER HS 200 | | CPCSD ACALA MAXXA | | GERMAIN GC510 | |
|-----------------------------------|------------------------------|----------------|-------------------------------|----------------|----------------------------------|-----------------|----------------------------------|-----------------|
| | SOUTHWEST | | SOUTHWEST | | FAR WEST | | FAR WEST | |
| | Texas | | Texas | | San Joaquin Valley of California | | San Joaquin Valley of California | |
| | (Lamesa Area) | (Lubbock Area) | (Abilene Area) | (Lubbock Area) | (Northern Area) | (Southern Area) | (Northern Area) | (Southern Area) |
| CLASSIFICATION | | | | | | | | |
| Color Grade (code) | 21 | 22 | 12 | 22 | 12 | 21 | 21 | 32 |
| Leaf Grade (code) | 3 | 4 | 1 | 3 | 3 | 2 | 2 | 3 |
| HVI Staple (code) | 35 | 35 | 34 | 36 | 36 | 36 | 37 | 37 |
| HVI - MCI | | | | | | | | |
| UHM (in) | 1.08 | 1.09 | 1.07 | 1.11 | 1.13 | 1.13 | 1.17 | 1.16 |
| Uniformity Index (%) | 81.8 | 81.4 | 80.8 | 80.6 | 82.4 | 81.4 | 82.6 | 82.4 |
| Strength (g/tex) | 29.4 | 27.9 | 29.5 | 28.4 | 31.9 | 32.3 | 33.8 | 33.4 |
| Micronaire (rdg) | 4.26 | 3.46 | 4.28 | 3.58 | 3.98 | 4.32 | 4.28 | 4.40 |
| Trash (% area) | 0.32 | 0.38 | 0.22 | 0.24 | 0.28 | 0.20 | 0.28 | 0.40 |
| Color Rd (%) | 79.0 | 79.8 | 78.0 | 78.0 | 76.4 | 79.0 | 79.0 | 75.8 |
| Color +b (units) | 9.62 | 9.34 | 10.30 | 9.92 | 10.00 | 9.42 | 9.30 | 9.46 |
| STELOMETER | | | | | | | | |
| 1/8" - Gage Strength (g/tex)* | 19.4 | 18.2 | 18.8 | 18.9 | 22.5 | 21.2 | 21.6 | 22.3 |
| Elongation (%) | 7.9 | 8.7 | 6.6 | 8.2 | 7.5 | 6.9 | 6.5 | 6.5 |
| SUTER-WEBB LENGTH ARRAY | | | | | | | | |
| UQL (in) | 1.14 | 1.19 | 1.12 | 1.21 | 1.21 | 1.24 | 1.25 | 1.24 |
| Mean Length (in) | 0.95 | 0.98 | 0.91 | 0.97 | 0.99 | 1.00 | 1.02 | 1.02 |
| CV (%) | 28.4 | 29.3 | 31.2 | 32.6 | 31.4 | 30.9 | 29.7 | 29.9 |
| Short Fiber Content (%) | 8.6 | 8.9 | 10.8 | 11.2 | 10.2 | 9.2 | 8.0 | 8.5 |
| II/C/SHIRLEY FMT | | | | | | | | |
| Fineness (mtex) | 173.1 | 152.7 | 166.4 | 156.6 | 152.8 | 160.4 | 157.8 | 158.4 |
| Maturity Ratio | 0.909 | 0.795 | 0.950 | 0.828 | 0.933 | 0.997 | 0.995 | 1.028 |
| S. A. NON-LINT CONTENT | | | | | | | | |
| Visible Waste (%) | 1.7 | 2.5 | 0.9 | 1.1 | 2.0 | 1.0 | 1.7 | 1.8 |
| Total Waste (%) | 2.6 | 3.7 | 1.8 | 2.3 | 3.5 | 1.9 | 2.5 | 2.4 |
| NEPS OF RAW COTTON | | | | | | | | |
| AFIS-N (neps/gram) | 422 | 471 | 410 | 477 | 386 | 312 | 353 | 364 |
| Raw Stock Neps (neps/100 sq. in.) | 34 | 36 | 30 | 33 | 28 | 31 | 30 | 29 |
| SUGAR CONTENT (%) | 0.39 | 0.44 | 0.49 | 0.43 | 0.37 | 0.26 | 0.31 | 0.29 |

*Stelometer results adjusted to Pressley level.

| | DELTAPINE PAYMASTER HS 26 | | | | | | | | | | DELTAPINE PAYMASTER HS 200 | | | | | | | | | |
|---------------------------------|------------------------------|-----|-----|-----|-----|----------------|-----|-----|-----|-----|-------------------------------|-----|-----|-----|-----|----------------|-----|-----|--|--|
| | SOUTHWEST | | | | | | | | | | SOUTHWEST | | | | | | | | | |
| | Texas | | | | | | | | | | Texas | | | | | | | | | |
| | (Lamesa Area) | | | | | (Lubbock Area) | | | | | (Abilene Area) | | | | | (Lubbock Area) | | | | |
| | 10s | 22s | 30s | 10s | 22s | 30s | 10s | 22s | 30s | 10s | 22s | 30s | 10s | 22s | 30s | 10s | 22s | 30s | | |
| OPENING & CARDING WASTE (%) | | | | | | | | | | | | | | | | | | | | |
| YARN SKEIN STRENGTH TEST: | | | | | | | | | | | | | | | | | | | | |
| Yarn Number (Ne) | | | | | | | | | | | | | | | | | | | | |
| CV% of Yarn Number | | | | | | | | | | | | | | | | | | | | |
| Count-Strength-Product | | | | | | | | | | | | | | | | | | | | |
| CV% of CSP | | | | | | | | | | | | | | | | | | | | |
| Elongation (%) | | | | | | | | | | | | | | | | | | | | |
| SINGLE-YARN STRENGTH TEST: | | | | | | | | | | | | | | | | | | | | |
| Elongation (%) | | | | | | | | | | | | | | | | | | | | |
| CV% of Elongation | | | | | | | | | | | | | | | | | | | | |
| Force (N) | | | | | | | | | | | | | | | | | | | | |
| Tenacity (mN/tex) | | | | | | | | | | | | | | | | | | | | |
| CV% of Tenacity | | | | | | | | | | | | | | | | | | | | |
| Specific Work to Rupture (cm*N) | | | | | | | | | | | | | | | | | | | | |
| CV% of Specific Work to Rupture | | | | | | | | | | | | | | | | | | | | |
| USTER YARN EVENNESS TEST: | | | | | | | | | | | | | | | | | | | | |
| Neps/1,000 yd | | | | | | | | | | | | | | | | | | | | |
| Thick Places/1,000 yd | | | | | | | | | | | | | | | | | | | | |
| Thin Places/1,000 yd | | | | | | | | | | | | | | | | | | | | |
| Non-Uniformity (CV%) | | | | | | | | | | | | | | | | | | | | |
| YARN APPEARANCE INDEX | | | | | | | | | | | | | | | | | | | | |

| | DELTAPINE PAYMASTER HS 26 | | | | | | DELTAPINE PAYMASTER HS 200 | | | | | |
|--|------------------------------|------|------|----------------|-------|-------|-------------------------------|------|------|----------------|------|------|
| | SOUTHWEST | | | | | | SOUTHWEST | | | | | |
| | Texas | | | | | | Texas | | | | | |
| | (Lamesa Area) | | | (Lubbock Area) | | | (Abilene Area) | | | (Lubbock Area) | | |
| | 22s | 36s | 50s | 22s | 36s | 50s | 22s | 36s | 50s | 22s | 36s | 50s |
| OPENING & CARDING WASTE (%) | 7.35 | 7.35 | 7.35 | 11.28 | 11.28 | 11.28 | 6.73 | 6.73 | 6.73 | 8.70 | 8.70 | 8.70 |
| YARN SKEIN STRENGTH TEST: | | | | | | | | | | | | |
| Yarn Number (Ne) | 22.3 | 36.6 | 50.5 | 21.9 | 35.2 | 47.4 | 22.0 | 35.6 | 49.6 | 21.7 | 35.6 | 47.7 |
| CV% of Yarn Number | 1.7 | 1.2 | 1.2 | 1.4 | 1.3 | 1.3 | 1.0 | 1.0 | 1.3 | 1.3 | 1.1 | 1.8 |
| Count-Strength-Product | 2450 | 2251 | 2029 | 2403 | 2213 | 1957 | 2403 | 2218 | 1968 | 2297 | 2033 | 1797 |
| CV% of CSP | 3.6 | 4.6 | 3.4 | 2.9 | 3.6 | 3.1 | 4.3 | 5.1 | 4.1 | 4.0 | 4.2 | 4.3 |
| Elongation (%) | 7.0 | 5.7 | 5.5 | 8.0 | 7.0 | 6.2 | 5.9 | 5.5 | 4.5 | 6.7 | 5.9 | 5.0 |
| SINGLE-YARN STRENGTH TEST: | | | | | | | | | | | | |
| Elongation (%) | 6.56 | 5.73 | 6.24 | 7.41 | 6.58 | 6.59 | 5.26 | 4.67 | 4.73 | 6.29 | 5.44 | 5.43 |
| CV% of Elongation | 11.9 | 12.7 | 8.6 | 10.8 | 12.8 | 8.9 | 12.3 | 13.6 | 7.7 | 13.0 | 13.6 | 6.4 |
| Force (N) | 4.07 | 2.35 | 1.65 | 4.12 | 2.34 | 1.66 | 4.03 | 2.43 | 1.57 | 3.98 | 2.20 | 1.52 |
| Tenacity (mN/tex) | 152 | 144 | 100 | 153 | 143 | 101 | 150 | 148 | 96 | 148 | 134 | 93 |
| CV% of Tenacity | 10.4 | 12.7 | 6.1 | 10.1 | 10.9 | 7.1 | 11.5 | 13.7 | 6.1 | 10.1 | 12.0 | 6.7 |
| Specific Work to Rupture (cm*N) | 3.12 | 1.64 | 1.16 | 3.57 | 1.85 | 1.28 | 2.48 | 1.39 | 0.86 | 2.99 | 1.47 | 0.98 |
| CV% of Specific Work to Rupture | 17.0 | 20.7 | 4.0 | 17.2 | 19.7 | 4.5 | 19.8 | 22.0 | 4.0 | 18.0 | 19.8 | 3.9 |
| USTER YARN EVENNESS TEST: | | | | | | | | | | | | |
| Neps/1,000 yd | 40 | 307 | 578 | 30 | 253 | 472 | 37 | 394 | 823 | 37 | 513 | 844 |
| Thick Places/1,000 yd | 519 | 1507 | 2028 | 561 | 1488 | 2182 | 1166 | 2037 | 2826 | 1124 | 2248 | 2832 |
| Thin Places/1,000 yd | 65 | 470 | 903 | 61 | 430 | 1176 | 246 | 845 | 1475 | 194 | 844 | 1653 |
| Non-Uniformity (CV%) | 17.6 | 22.1 | 24.2 | 17.8 | 22.1 | 24.8 | 20.5 | 24.1 | 27.1 | 20.0 | 24.5 | 27.1 |
| YARN APPEARANCE INDEX | 120 | 60 | 60 | 127 | 60 | 60 | 130 | 60 | 60 | 120 | 60 | 60 |

| | CPCSD ACALA MAXXA | | | | | | GERMAIN GC510 | | | | | |
|--|----------------------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|
| | FAR WEST | | | | | | FAR WEST | | | | | |
| | San Joaquin Valley of California | | | | | | San Joaquin Valley of California | | | | | |
| | (Northern Area) | | | | | | (Northern Area) | | | | | |
| | 10s | 22s | 30s | 10s | 22s | 30s | 10s | 22s | 30s | 10s | 22s | 30s |
| OPENING & CARDING WASTE (%) | 7.60 | 7.60 | 7.60 | 7.98 | 7.98 | 7.98 | 7.89 | 7.89 | 7.89 | 7.67 | 7.67 | 7.67 |
| YARN SKEIN STRENGTH TEST: | | | | | | | | | | | | |
| Yarn Number (Ne) | 9.8 | 21.7 | 29.9 | 10.2 | 21.6 | 29.7 | 10.1 | 22.3 | 29.4 | 9.7 | 22.4 | 29.5 |
| CV% of Yarn Number | 1.3 | 1.9 | 1.2 | 1.1 | 1.2 | 1.3 | 1.2 | 1.4 | 1.5 | 1.1 | 1.7 | 1.4 |
| Count-Strength-Product | 2627 | 2308 | 2075 | 2823 | 2404 | 2085 | 2821 | 2476 | 2214 | 2804 | 2380 | 2124 |
| CV% of CSP | 4.1 | 2.7 | 6.0 | 3.8 | 3.4 | 3.2 | 3.5 | 3.2 | 3.6 | 3.1 | 2.9 | 3.4 |
| Elongation (%) | 7.4 | 6.4 | 5.7 | 7.0 | 6.6 | 5.6 | 6.7 | 6.0 | 5.7 | 7.6 | 6.2 | 5.5 |
| SINGLE-YARN STRENGTH TEST: | | | | | | | | | | | | |
| Elongation (%) | 6.74 | 6.14 | 5.42 | 5.94 | 5.62 | 4.86 | 6.33 | 6.50 | 5.41 | 6.16 | 5.55 | 5.47 |
| CV% of Elongation | 9.8 | 8.9 | 10.5 | 12.6 | 11.9 | 8.2 | 9.0 | 13.8 | 11.1 | 13.5 | 12.2 | 8.9 |
| Force (N) | 9.31 | 3.79 | 2.58 | 8.80 | 3.80 | 2.58 | 9.12 | 3.86 | 2.65 | 9.68 | 3.74 | 2.57 |
| Tenacity (mN/tex) | 158 | 141 | 131 | 149 | 142 | 131 | 154 | 144 | 135 | 164 | 139 | 130 |
| CV% of Tenacity | 14.2 | 12.6 | 8.1 | 14.2 | 10.0 | 10.6 | 14.0 | 10.6 | 9.8 | 14.7 | 11.0 | 9.5 |
| Specific Work to Rupture (cm*N) | 7.08 | 2.59 | 1.65 | 5.79 | 2.34 | 1.45 | 6.44 | 2.60 | 1.63 | 6.77 | 2.34 | 1.54 |
| CV% of Specific Work to Rupture | 7.4 | 7.4 | 5.5 | 8.4 | 6.5 | 5.9 | 7.1 | 6.8 | 6.5 | 8.4 | 7.2 | 6.3 |
| USTER YARN EVENNESS TEST: | | | | | | | | | | | | |
| Neps/1,000 yd | 0 | 2 | 18 | 2 | 2 | 21 | 1 | 5 | 42 | 0 | 1 | 33 |
| Thick Places/1,000 yd | 12 | 42 | 182 | 9 | 29 | 176 | 7 | 39 | 225 | 10 | 40 | 178 |
| Thin Places/1,000 yd | 0 | 7 | 69 | 0 | 7 | 80 | 0 | 9 | 86 | 0 | 9 | 92 |
| Non-Uniformity (CV%) | 11.3 | 13.3 | 16.2 | 11.5 | 13.5 | 16.3 | 11.4 | 13.6 | 16.5 | 11.8 | 13.5 | 16.4 |
| YARN APPEARANCE INDEX | 100 | 127 | 113 | 100 | 123 | 110 | 80 | 130 | 110 | 77 | 127 | 113 |

| | CPCSD ACALA MAXXA | | | | | | GERMAIN GC510 | | | | | |
|--|----------------------------------|------|------|-----------------|------|------|----------------------------------|------|------|-----------------|------|------|
| | FAR WEST | | | | | | FAR WEST | | | | | |
| | San Joaquin Valley of California | | | | | | San Joaquin Valley of California | | | | | |
| | (Northern Area) | | | (Southern Area) | | | (Northern Area) | | | (Southern Area) | | |
| | 22s | 36s | 50s | 22s | 36s | 50s | 22s | 36s | 50s | 22s | 36s | 50s |
| OPENING & CARDING WASTE (%) | 7.60 | 7.60 | 7.60 | 7.98 | 7.98 | 7.98 | 7.89 | 7.89 | 7.89 | 7.67 | 7.67 | 7.67 |
| YARN SKEIN STRENGTH TEST: | | | | | | | | | | | | |
| Yarn Number (Ne) | 22.5 | 36.7 | 49.2 | 22.9 | 35.7 | 48.7 | 22.2 | 35.9 | 48.7 | 22.9 | 37.5 | 48.8 |
| CV% of Yarn Number | 2.3 | 2.4 | 1.5 | 1.1 | 1.1 | 1.6 | 2.7 | 1.1 | 1.5 | 2.0 | 1.9 | 1.5 |
| Count-Strength-Product | 2740 | 2633 | 2353 | 2873 | 2725 | 2427 | 3041 | 2890 | 2682 | 2914 | 2775 | 2490 |
| CV% of CSP | 3.8 | 4.0 | 4.6 | 2.5 | 5.6 | 3.4 | 3.0 | 3.8 | 4.8 | 3.7 | 3.0 | 4.5 |
| Elongation (%) | 5.9 | 5.3 | 4.7 | 5.7 | 5.4 | 4.7 | 6.2 | 5.5 | 5.0 | 5.7 | 4.7 | 4.5 |
| SINGLE-YARN STRENGTH TEST: | | | | | | | | | | | | |
| Elongation (%) | 5.73 | 5.04 | 4.78 | 4.99 | 4.61 | 4.92 | 5.52 | 5.42 | 5.20 | 5.20 | 4.88 | 4.82 |
| CV% of Elongation | 11.0 | 12.5 | 7.5 | 10.7 | 10.9 | 10.0 | 8.7 | 10.1 | 10.0 | 13.8 | 10.9 | 8.3 |
| Force (N) | 4.95 | 2.72 | 1.95 | 4.51 | 2.74 | 1.90 | 5.00 | 3.02 | 2.08 | 4.82 | 2.76 | 1.97 |
| Tenacity (mN/tex) | 184 | 166 | 119 | 168 | 167 | 116 | 186 | 184 | 127 | 180 | 168 | 120 |
| CV% of Tenacity | 9.8 | 11.4 | 7.9 | 12.2 | 11.8 | 6.3 | 11.1 | 12.8 | 7.8 | 10.9 | 11.1 | 8.7 |
| Specific Work to Rupture (cm*N) | 3.20 | 1.60 | 1.08 | 2.54 | 1.46 | 1.02 | 3.09 | 1.78 | 1.20 | 2.87 | 1.50 | 1.07 |
| CV% of Specific Work to Rupture | 16.1 | 17.8 | 4.8 | 18.9 | 18.9 | 4.4 | 16.7 | 18.8 | 5.2 | 18.8 | 17.8 | 5.3 |
| USTER YARN EVENNESS TEST: | | | | | | | | | | | | |
| Neps/1,000 yd | 74 | 295 | 577 | 95 | 398 | 715 | 104 | 411 | 695 | 107 | 460 | 675 |
| Thick Places/1,000 yd | 588 | 1183 | 1880 | 821 | 1594 | 2464 | 501 | 1192 | 1753 | 649 | 1374 | 1667 |
| Thin Places/1,000 yd | 70 | 177 | 828 | 90 | 362 | 1197 | 44 | 171 | 656 | 76 | 280 | 519 |
| Non-Uniformity (CV%) | 18.1 | 20.6 | 23.6 | 18.9 | 22.4 | 25.6 | 17.3 | 20.6 | 23.2 | 18.2 | 21.4 | 22.9 |
| YARN APPEARANCE INDEX | 120 | 60 | 60 | 120 | 60 | 60 | 120 | 60 | 60 | 123 | 60 | 60 |

| | CPCSD ACALA MAXXA | | | | | | GERMAIN GC510 | | | | | |
|--|----------------------------------|------|------|-----------------|------|------|----------------------------------|------|------|-----------------|------|------|
| | FAR WEST | | | | | | FAR WEST | | | | | |
| | San Joaquin Valley of California | | | | | | San Joaquin Valley of California | | | | | |
| | (Northern Area) | | | (Southern Area) | | | (Northern Area) | | | (Southern Area) | | |
| | 22s | 36s | 50s | 22s | 36s | 50s | 22s | 36s | 50s | 22s | 36s | 50s |
| OPENING & CARDING WASTE (%) | 7.60 | 7.60 | 7.60 | 7.98 | 7.98 | 7.98 | 7.89 | 7.89 | 7.89 | 7.67 | 7.67 | 7.67 |
| COMBING WASTE (%): | 16.5 | 16.5 | 16.5 | 17.7 | 17.7 | 17.7 | 15.1 | 15.1 | 15.1 | 15.9 | 15.9 | 15.9 |
| YARN SKEIN STRENGTH TEST: | | | | | | | | | | | | |
| Yarn Number (Ne) | 22.9 | 36.8 | 51.7 | 21.2 | 36.3 | 50.6 | 22.1 | 37.5 | 51.0 | 21.6 | 37.6 | 49.0 |
| CV% of Yarn Number | 3.1 | 2.0 | 1.7 | 2.5 | 2.2 | 1.2 | 3.0 | 2.8 | 2.1 | 1.6 | 1.8 | 1.7 |
| Count-Strength-Product | 3067 | 3007 | 2735 | 3406 | 3180 | 2845 | 3414 | 3269 | 2970 | 3466 | 3228 | 2796 |
| CV% of CSP | 4.4 | 3.3 | 2.7 | 4.0 | 2.9 | 3.0 | 2.9 | 2.7 | 4.4 | 2.7 | 2.6 | 4.3 |
| Elongation (%) | 6.3 | 5.9 | 4.8 | 6.2 | 5.4 | 4.6 | 6.3 | 5.5 | 5.0 | 6.0 | 5.5 | 4.9 |
| SINGLE-YARN STRENGTH TEST: | | | | | | | | | | | | |
| Elongation (%) | 5.98 | 6.19 | 5.15 | 6.04 | 4.82 | 4.65 | 5.63 | 5.50 | 4.63 | 5.63 | 5.59 | 4.62 |
| CV% of Elongation | 10.0 | 12.8 | 9.7 | 8.3 | 10.7 | 9.4 | 11.3 | 11.1 | 8.5 | 9.6 | 12.0 | 10.0 |
| Force (N) | 4.94 | 2.97 | 1.96 | 5.86 | 3.06 | 2.06 | 5.42 | 3.01 | 2.11 | 5.55 | 3.04 | 2.23 |
| Tenacity (mN/tex) | 184 | 181 | 120 | 218 | 187 | 126 | 202 | 184 | 129 | 207 | 186 | 136 |
| CV% of Tenacity | 10.6 | 11.2 | 9.4 | 8.6 | 10.6 | 8.0 | 8.7 | 9.7 | 7.4 | 8.6 | 9.9 | 9.3 |
| Specific Work to Rupture (cm*N) | 3.18 | 1.91 | 1.17 | 3.59 | 1.67 | 1.10 | 3.36 | 1.81 | 1.16 | 3.44 | 1.80 | 1.21 |
| CV% of Specific Work to Rupture | 16.0 | 7.5 | 5.9 | 13.9 | 17.6 | 5.2 | 14.7 | 6.4 | 5.0 | 14.0 | 6.6 | 5.9 |
| USTER YARN EVENNESS TEST: | | | | | | | | | | | | |
| Neps/1,000 yd | 15 | 62 | 167 | 7 | 52 | 160 | 16 | 80 | 170 | 15 | 75 | 136 |
| Thick Places/1,000 yd | 67 | 189 | 522 | 61 | 246 | 474 | 39 | 196 | 416 | 49 | 153 | 479 |
| Thin Places/1,000 yd | 2 | 45 | 169 | 6 | 36 | 177 | 4 | 26 | 174 | 4 | 10 | 204 |
| Non-Uniformity (CV%) | 13.6 | 15.6 | 18.2 | 13.6 | 16 | 18.2 | 13.4 | 15.6 | 17.9 | 13.2 | 14.4 | 18.4 |
| YARN APPEARANCE INDEX | 127 | 117 | 107 | 137 | 113 | 113 | 123 | 117 | 110 | 130 | 117 | 117 |

Fiber and Processing Tests of Leading Cotton Varieties - 1994 Cotton Crop - Fiber Properties.

| | DELTAPINE 51 | | DELTAPINE 5415 | | DELTAPINE ACALA 90 | | STONEVILLE 453 | |
|-----------------------------------|----------------|------------|----------------|------------|--------------------|---------|----------------|-----------|
| | SOUTHEAST | S. CENTRAL | FAR WEST | | SOUTH EAST | | SOUTH CENTRAL | |
| | North Carolina | Louisiana | Arizona | California | Alabama | Georgia | Missouri | Tennessee |
| CLASSIFICATION | | | | | | | | |
| Color Grade (code) | 31 | 32 | 11 | 11 | 32 | 41 | 31 | 32 |
| Leaf Grade (code) | 3 | 3 | 2 | 1 | 3 | 2 | 4 | 4 |
| HVI Staple (code) | 37 | 37 | 35 | 36 | 35 | 35 | 36 | 36 |
| HVI - MCI | | | | | | | | |
| UHM (in) | 1.15 | 1.15 | 1.10 | 1.12 | 1.08 | 1.10 | 1.13 | 1.11 |
| Uniformity Index (%) | 82.6 | 81.2 | 79.8 | 81.0 | 80.8 | 81.4 | 80.8 | 81.2 |
| Strength (g/tex) | 26.9 | 27.1 | 28.3 | 29.3 | 26.1 | 28.3 | 27.5 | 27.6 |
| Micronaire (rdg) | 4.28 | 4.56 | 4.48 | 4.62 | 4.30 | 4.36 | 4.56 | 4.12 |
| Trash (% area) | 0.46 | 0.46 | 0.32 | 0.20 | 0.38 | 0.34 | 0.56 | 0.58 |
| Color Rd (%) | 77.2 | 77.8 | 75.4 | 81.4 | 75.4 | 73.0 | 76.8 | 76.0 |
| Color + b (units) | 8.18 | 8.44 | 9.36 | 8.46 | 8.18 | 7.18 | 8.68 | 9.22 |
| STELOMETER | | | | | | | | |
| 1/8" - Gage Strength (g/tex)* | 16.5 | 17.4 | 18.3 | 18.4 | 16.8 | 18.2 | 18.4 | 18.1 |
| Elongation (%) | 8.4 | 7.4 | 6.7 | 7.0 | 8.0 | 6.9 | 7.3 | 7.6 |
| SUTER-WEBB LENGTH ARRAY | | | | | | | | |
| UQL (in) | 1.25 | 1.25 | 1.16 | 1.17 | 1.17 | 1.17 | 1.21 | 1.20 |
| Mean Length (in) | 1.01 | 0.99 | 0.90 | 0.91 | 0.93 | 0.94 | 0.97 | 0.95 |
| CV (%) | 32.4 | 33.7 | 37.1 | 36.6 | 33.7 | 32.8 | 33.2 | 34.2 |
| Short Fiber Content (%) | 10.2 | 10.8 | 14.9 | 15.9 | 12.7 | 11.3 | 10.8 | 12.4 |
| IIC/SHIRLEY FMT | | | | | | | | |
| Fineness (mtex) | 180.4 | 176.5 | 180.3 | 182.2 | 183.7 | 172.1 | 189.5 | 174.5 |
| Maturity Ratio | 0.872 | 0.939 | 0.932 | 0.968 | 0.891 | 0.950 | 0.899 | 0.852 |
| S. A. NON-LINT CONTENT | | | | | | | | |
| Visible Waste (%) | 2.1 | 2.0 | 1.4 | 1.0 | 1.4 | 1.2 | 2.2 | 1.9 |
| Total Waste (%) | 3.3 | 2.9 | 2.4 | 2.0 | 2.4 | 2.5 | 3.3 | 2.8 |
| NEPS OF RAW COTTON | | | | | | | | |
| AFIS-N (neps/gram) | 360 | 382 | 420 | 374 | 342 | 351 | 342 | 482 |
| Raw Stock Neps (neps/100 sq. in.) | 25 | 29 | 30 | 24 | 30 | 30 | 25 | 32 |
| SUGAR CONTENT (%) | 0.22 | 0.23 | 0.47 | 0.30 | 0.14 | 0.11 | 0.30 | 0.32 |

*Stelometer results adjusted to Pressley level.

| | DELTAPINE 51 | | | | | | DELTAPINE 5415 | | | | | |
|---------------------------------------|----------------|------|------|------------|------|------|----------------|------|------|------------|------|------|
| | SOUTH EAST | | | S. CENTRAL | | | FAR WEST | | | | | |
| | North Carolina | | | Louisiana | | | Arizona | | | California | | |
| | 10s | 22s | 30s | 10s | 22s | 30s | 10s | 22s | 30s | 10s | 22s | 30s |
| OPENING & CARDING ASTE (%) | 9.17 | 9.17 | 9.17 | 9.36 | 9.36 | 9.36 | 9.35 | 9.35 | 9.35 | 9.00 | 9.00 | 9.00 |
| YARN SKEIN STRENGTH TEST: | | | | | | | | | | | | |
| Yarn Number (Ne) | 10.0 | 21.6 | 28.7 | 9.8 | 21.5 | 29.5 | 10.0 | 21.9 | 29.0 | 10.2 | 21.8 | 29.8 |
| CV% of Yarn Number | 1.1 | 1.7 | 1.6 | 1.0 | 1.3 | 1.5 | 1.1 | 1.7 | 1.5 | 1.4 | 1.1 | 1.2 |
| Count-Strength-Product | 2145 | 1794 | 1598 | 2165 | 1817 | 1627 | 2174 | 1741 | 1552 | 1601 | 1885 | 1661 |
| CV% of CSP | 3.3 | 3.2 | 4.4 | 4.6 | 3.4 | 3.8 | 3.8 | 4.8 | 3.3 | 4.5 | 3.4 | 2.9 |
| Elongation (%) | 7.7 | 7.0 | 6.6 | 7.6 | 6.8 | 6.4 | 6.7 | 5.8 | 5.2 | 7.2 | 5.8 | 5.0 |
| SINGLE-YARN STRENGTH TEST: | | | | | | | | | | | | |
| Elongation (%) | 8.28 | 7.43 | 6.90 | 7.08 | 6.35 | 5.58 | 5.36 | 5.50 | 4.38 | 6.28 | 5.82 | 5.39 |
| CV% of Elongation | 10.2 | 7.9 | 8.5 | 11.5 | 10.9 | 7.8 | 8.8 | 9.8 | 14.5 | 10.5 | 9.8 | 10.5 |
| Force (N) | 7.27 | 3.12 | 2.21 | 7.44 | 3.06 | 2.06 | 7.38 | 2.88 | 2.12 | 7.59 | 3.07 | 2.11 |
| Tenacity (mN/tex) | 123 | 116 | 112 | 126 | 114 | 105 | 125 | 107 | 108 | 129 | 114 | 107 |
| CV% of Tenacity | 15.2 | 9.2 | 12.0 | 15.6 | 11.7 | 9.9 | 12.0 | 8.4 | 10.9 | 14.3 | 9.2 | 9.6 |
| Specific Work to Rupture (cm*N) | 6.95 | 2.65 | 1.80 | 6.22 | 2.29 | 1.42 | 4.86 | 1.78 | 1.16 | 5.50 | 1.98 | 1.29 |
| CV% of Specific Work to Rupture | 7.1 | 5.2 | 6.3 | 8.0 | 7.1 | 5.8 | 16.3 | 5.3 | 21.2 | 7.6 | 5.9 | 6.0 |
| USTER YARN EVENNESS TEST: | | | | | | | | | | | | |
| Neps/1,000 yd | 3 | 4 | 49 | 2 | 4 | 59 | 2 | 6 | 14 | 1 | 0 | 14 |
| Thick Places/1,000 yd | 26 | 55 | 209 | 24 | 58 | 277 | 19 | 70 | 204 | 13 | 57 | 231 |
| Thin Places/1,000 yd | 0 | 19 | 142 | 0 | 11 | 160 | 0 | 19 | 127 | 0 | 10 | 114 |
| Non-Uniformity (CV%) | 12.0 | 14.1 | 16.7 | 12.1 | 14.4 | 17.2 | 12.5 | 14.5 | 17.2 | 12.2 | 14.3 | 16.8 |
| YARN APPEARANCE INDEX | 90 | 117 | 110 | 90 | 137 | 110 | 100 | 123 | 103 | 100 | 117 | 107 |

| | DELTAPINE 51 | | | | | | DELTAPINE 5415 | | | | | |
|---------------------------------|----------------|------|------|------------|------|------|----------------|------|------|------------|------|------|
| | SOUTH EAST | | | S. CENTRAL | | | FAR WEST | | | | | |
| | North Carolina | | | Louisiana | | | Arizona | | | California | | |
| | 22s | 36s | 50s | 22s | 36s | 50s | 22s | 36s | 50s | 22s | 36s | 50s |
| | | | | | | | | | | | | |
| OPENING & CARDING WASTE (%) | 9.17 | 9.17 | 9.17 | 9.36 | 9.36 | 9.36 | 9.35 | 9.35 | 9.35 | 9.00 | 9.00 | 9.00 |
| YARN SKEIN STRENGTH TEST: | | | | | | | | | | | | |
| Yarn Number (Ne) | 22.3 | 35.9 | 48.5 | 21.5 | 35.8 | 48.5 | 21.5 | 36.5 | 49.5 | 21.9 | 36.5 | 49.1 |
| CV% of Yarn Number | 1.2 | 1.3 | 1.8 | 1.0 | 1.4 | 1.5 | 1.3 | 1.2 | 1.7 | 1.1 | 1.3 | 1.6 |
| Count-Strength-Product | 2102 | 1901 | 1696 | 2139 | 1961 | 1692 | 1996 | 1748 | 1449 | 2225 | 2037 | 1723 |
| CV% of CSP | 4.9 | 4.8 | 3.7 | 3.6 | 2.3 | 4.8 | 6.1 | 4.8 | 4.4 | 4.0 | 3.5 | 4.3 |
| Elongation (%) | 6.5 | 6.2 | 5.3 | 6.5 | 5.9 | 5.3 | 5.7 | 4.5 | 4.0 | 6.0 | 5.0 | 4.2 |
| SINGLE-YARN STRENGTH TEST: | | | | | | | | | | | | |
| Elongation (%) | 6.86 | 5.47 | 5.98 | 6.16 | 5.03 | 5.11 | 4.92 | 4.64 | 4.55 | 5.35 | 4.47 | 5.01 |
| CV% of Elongation | 13.4 | 15.1 | 7.6 | 11.1 | 14.2 | 8.0 | 13.6 | 14.3 | 13.2 | 10.2 | 11.7 | 9.2 |
| Force (N) | 3.62 | 2.02 | 1.42 | 3.76 | 2.01 | 1.45 | 3.74 | 2.01 | 1.28 | 3.88 | 2.09 | 1.51 |
| Tenacity (mN/tex) | 135 | 123 | 86 | 140 | 123 | 88 | 140 | 122 | 64 | 145 | 128 | 92 |
| CV% of Tenacity | 10.4 | 12.6 | 6.1 | 11.7 | 12.9 | 6.6 | 12.1 | 16.2 | 17.7 | 9.5 | 11.9 | 5.6 |
| Specific Work to Rupture (cm*N) | 2.89 | 1.40 | 1.01 | 2.69 | 1.26 | 0.88 | 2.17 | 1.09 | 0.69 | 2.36 | 1.14 | 0.86 |
| CV% of Specific Work to Rupture | 18.3 | 21.1 | 4.0 | 19.8 | 21.5 | 4.4 | 19.8 | 24.7 | 25.4 | 14.8 | 18.9 | 4.0 |
| USTER YARN EVENNESS TEST: | | | | | | | | | | | | |
| Neps/1,000 yd | 76 | 656 | 1216 | 59 | 678 | 1197 | 182 | 1048 | 1708 | 110 | 884 | 1527 |
| Thick Places/1,000 yd | 1199 | 2451 | 3104 | 1415 | 2595 | 3388 | 2201 | 3479 | 4245 | 1716 | 3185 | 3712 |
| Thin Places/1,000 yd | 188 | 1136 | 1562 | 252 | 1117 | 2107 | 669 | 1929 | 3049 | 388 | 1445 | 2221 |
| Non-Uniformity (CV%) | 20.3 | 25.3 | 27.6 | 21.2 | 26.2 | 28.9 | 24.4 | 29.0 | 31.6 | 22.3 | 27.6 | 29.8 |
| YARN APPEARANCE INDEX | 120 | 60 | 60 | 113 | 60 | 60 | 93 | 60 | 60 | 80 | 60 | 60 |

| | DELTA PINE Acala 90 | | | | | | STONEVILLE 453 | | | | | |
|--|---------------------|------|------|---------|------|------|----------------|------|------|-----------|------|------|
| | SOUTH EAST | | | | | | SOUTH CENTRAL | | | | | |
| | Alabama | | | Georgia | | | Missouri | | | Tennessee | | |
| | 10s | 22s | 30s | 10s | 22s | 30s | 10s | 22s | 30s | 10s | 22s | 30s |
| OPENING & CARDING WASTE (%) | 8.84 | 8.84 | 8.84 | 8.62 | 8.62 | 8.62 | 8.64 | 8.64 | 8.64 | 8.23 | 8.23 | 8.23 |
| YARN SKEIN STRENGTH TEST: | | | | | | | | | | | | |
| Yarn Number (Ne) | 10.1 | 21.2 | 28.8 | 9.8 | 22.5 | 29.8 | 9.8 | 21.5 | 29.7 | 10.2 | 22.4 | 29.4 |
| CV% of Yarn Number | 1.1 | 1.3 | 1.3 | 1.2 | 1.2 | 1.5 | 1.1 | 1.3 | 1.4 | 1.1 | 1.4 | 1.4 |
| Count-Strength-Product | 2221 | 1827 | 1666 | 2292 | 1901 | 1737 | 2224 | 1834 | 1622 | 2197 | 1796 | 1585 |
| CV% of CSP | 2.7 | 3.9 | 4.3 | 3.0 | 3.1 | 3.5 | 3.9 | 4.8 | 2.6 | 3.7 | 3.1 | 4.3 |
| Elongation (%) | 6.7 | 6.0 | 5.7 | 6.5 | 5.6 | 5.4 | 7.0 | 6.7 | 5.4 | 7.2 | 6.5 | 5.5 |
| SINGLE-YARN STRENGTH TEST: | | | | | | | | | | | | |
| Elongation (%) | 7.92 | 6.98 | 6.26 | 6.91 | 6.08 | 6.15 | 6.48 | 5.87 | 5.07 | 7.04 | 6.53 | 5.61 |
| CV% of Elongation | 15.8 | 12.4 | 9.9 | 14.2 | 11.6 | 10.1 | 13.0 | 9.7 | 7.9 | 10.3 | 10.1 | 6.6 |
| Force (N) | 7.59 | 3.34 | 2.15 | 8.13 | 3.18 | 2.21 | 7.53 | 2.94 | 2.01 | 7.28 | 2.97 | 2.15 |
| Tenacity (mN/tex) | 128 | 124 | 109 | 138 | 118 | 112 | 128 | 110 | 102 | 123 | 111 | 109 |
| CV% of Tenacity | 14.5 | 11.1 | 10.7 | 15.1 | 10.7 | 8.4 | 13.1 | 9.0 | 9.0 | 14.3 | 11.2 | 8.3 |
| Specific Work to Rupture (cm*N) | 6.75 | 2.69 | 1.59 | 6.36 | 2.24 | 1.53 | 5.87 | 2.02 | 1.29 | 6.04 | 2.22 | 1.48 |
| CV% of Specific Work to Rupture | 8.4 | 7.0 | 6.6 | 8.6 | 6.7 | 5.4 | 7.4 | 5.6 | 5.0 | 7.3 | 6.5 | 4.6 |
| USTER YARN EVENNESS TEST: | | | | | | | | | | | | |
| Neps/1,000 yd | 11 | 12 | 43 | 0 | 2 | 17 | 0 | 2 | 21 | 1 | 7 | 42 |
| Thick Places/1,000 yd | 72 | 93 | 292 | 27 | 85 | 208 | 14 | 74 | 268 | 26 | 104 | 280 |
| Thin Places/1,000 yd | 0 | 35 | 173 | 0 | 17 | 90 | 0 | 20 | 173 | 1 | 25 | 168 |
| Non-Uniformity (CV%) | 13.2 | 14.8 | 17.6 | 12.6 | 14.4 | 16.5 | 12.3 | 14.7 | 17.2 | 12.4 | 14.5 | 17.2 |
| YARN APPEARANCE INDEX | 90 | 113 | 110 | 80 | 113 | 120 | 77 | 120 | 110 | 87 | 117 | 107 |

| | DELTA PINE ACALA 90 | | | | | | STONEVILLE 453 | | | | | |
|--|----------------------------|------|------|----------------|------|------|-----------------------|------|------|------------------|------|------|
| | SOUTH EAST | | | | | | SOUTH CENTRAL | | | | | |
| | Alabama | | | Georgia | | | Missouri | | | Tennessee | | |
| | 22s | 36s | 50s | 22s | 36s | 50s | 22s | 36s | 50s | 22s | 36s | 50s |
| OPENING & CARDING WASTE (%) | 6.84 | 8.84 | 6.84 | 8.62 | 8.62 | 8.62 | 8.64 | 8.64 | 8.64 | 8.23 | 8.23 | 8.23 |
| YARN SKEIN STRENGTH TEST: | | | | | | | | | | | | |
| Yarn Number (Ne) | 22.1 | 35.3 | 50.2 | 22.1 | 36.2 | 48.2 | 21.9 | 35.7 | 47.4 | 21.9 | 35.9 | 48.9 |
| CV% of Yarn Number | 1.2 | 1.2 | 1.4 | 1.7 | 1.6 | 1.4 | 1.5 | 1.1 | 1.3 | 1.1 | 1.4 | 1.5 |
| Count-Strength-Product | 2105 | 1931 | 1632 | 2195 | 2008 | 1767 | 2213 | 1963 | 1737 | 2243 | 2016 | 1760 |
| CV% of CSP | 3.6 | 3.8 | 3.6 | 4.9 | 4.3 | 4.1 | 4.0 | 3.8 | 4.2 | 2.9 | 3.8 | 6.4 |
| Elongation (%) | 6.4 | 6.0 | 4.5 | 5.7 | 5.0 | 4.5 | 6.7 | 5.8 | 5.1 | 6.5 | 5.6 | 4.8 |
| SINGLE-YARN STRENGTH TEST: | | | | | | | | | | | | |
| Elongation (%) | 6.72 | 5.68 | 5.26 | 6.08 | 5.11 | 5.04 | 5.71 | 4.74 | 4.98 | 6.02 | 5.34 | 5.20 |
| CV% of Elongation | 10.6 | 11.3 | 5.7 | 9.8 | 12.9 | 7.3 | 13.8 | 13.0 | 9.8 | 13.3 | 12.8 | 7.8 |
| Force (N) | 3.66 | 2.11 | 1.36 | 3.83 | 2.11 | 1.51 | 3.65 | 2.06 | 1.43 | 3.92 | 2.26 | 1.41 |
| Tenacity (mN/tex) | 136 | 129 | 83 | 143 | 129 | 92 | 136 | 125 | 87 | 146 | 138 | 86 |
| CV% of Tenacity | 10.4 | 11.5 | 5.5 | 10.8 | 14.1 | 7.5 | 12.4 | 12.0 | 7.7 | 12.2 | 12.3 | 7.0 |
| Specific Work to Rupture (cm*N) | 2.76 | 1.45 | 0.86 | 2.54 | 1.31 | 0.89 | 2.45 | 1.22 | 0.84 | 2.83 | 1.45 | 0.87 |
| CV% of Specific Work to Rupture | 17.2 | 18.2 | 3.4 | 17.2 | 22.0 | 4.6 | 19.4 | 20.5 | 5.0 | 20.0 | 19.4 | 4.5 |
| USTER YARN EVENNESS TEST: | | | | | | | | | | | | |
| Neps/1,000 yd | 82 | 539 | 1270 | 38 | 674 | 1077 | 76 | 462 | 1057 | 66 | 489 | 716 |
| Thick Places/1,000 yd | 1524 | 2428 | 3410 | 1214 | 2679 | 3196 | 1258 | 2218 | 3120 | 869 | 1931 | 2582 |
| Thin Places/1,000 yd | 355 | 959 | 2223 | 247 | 1282 | 1856 | 264 | 692 | 1876 | 166 | 729 | 1508 |
| Non-Uniformity (CV%) | 21.6 | 25.2 | 29.0 | 20.7 | 26.3 | 28.0 | 20.8 | 24.4 | 27.8 | 19.3 | 23.8 | 26.4 |
| YARN APPEARANCE INDEX | 120 | 60 | 60 | 130 | 60 | 60 | 130 | 60 | 60 | 120 | 60 | 60 |

Fiber and Processing Tests of Leading Cotton Varieties - 1994 Cotton Crop - Fiber Properties.

| | DELTAPINE 20 | | | | DELTAPINE 50 | | | |
|-----------------------------------|---------------|-------|------------|-------|---------------|-------|----------------|---------------|
| | SOUTH CENTRAL | | SOUTH EAST | | SOUTH CENTRAL | | SOUTH WEST | |
| | Tennessee | | Alabama | | Missouri | | Mississippi | |
| | Mississippi | | | | | | (Abilene Area) | (Corpus Area) |
| CLASSIFICATION | | | | | | | | |
| Color Grade (code) | 32 | 32 | 31 | 32 | 32 | 22 | 22 | 21 |
| Leaf Grade (code) | 4 | 3 | 3 | 3 | 3 | 3 | 2 | 2 |
| HVI Staple (code) | 36 | 35 | 36 | 35 | 35 | 36 | 33 | 35 |
| HVI - MCI | | | | | | | | |
| UHM (in) | 1.11 | 1.09 | 1.11 | 1.10 | 1.10 | 1.13 | 1.04 | 1.09 |
| Uniformity Index (%) | 81.0 | 81.8 | 81.8 | 82.0 | 82.0 | 82.0 | 80.2 | 80.8 |
| Strength (g/tex) | 26.7 | 26.8 | 25.8 | 27.8 | 27.8 | 27.4 | 26.0 | 26.7 |
| Micronaire (rdg) | 4.08 | 4.52 | 4.14 | 4.02 | 4.02 | 3.74 | 4.74 | 4.38 |
| Trash (% area) | 0.56 | 0.35 | 0.50 | 0.50 | 0.50 | 0.42 | 0.22 | 0.26 |
| Color Rd (%) | 77.0 | 75.0 | 78.8 | 77.4 | 77.4 | 77.2 | 78.4 | 76.8 |
| Color +b (units) | 9.04 | 9.12 | 7.90 | 8.44 | 8.44 | 9.46 | 9.40 | 8.66 |
| STELOMETER | | | | | | | | |
| 1/8" - Gage Strength (g/tex)* | 18.1 | 17.2 | 16.2 | 19.5 | 19.5 | 18.0 | 17.0 | 17.8 |
| Elongation (%) | 8.4 | 8.9 | 8.9 | 8.2 | 8.2 | 8.5 | 7.2 | 7.0 |
| SUTER-WEBB LENGTH ARRAY | | | | | | | | |
| UQL (in) | 1.19 | 1.16 | 1.20 | 1.18 | 1.18 | 1.22 | 1.10 | 1.19 |
| Mean Length (in) | 0.97 | 0.94 | 0.97 | 0.96 | 0.96 | 0.99 | 0.89 | 0.93 |
| CV (%) | 31.6 | 31.5 | 32.6 | 31.1 | 31.1 | 31.4 | 32.8 | 34.1 |
| Short Fiber Content (%) | 10.1 | 10.7 | 11.9 | 10.6 | 10.6 | 9.8 | 12.8 | 12.3 |
| IIIC/SHIRLEY FMT | | | | | | | | |
| Fineness (mtex) | 168.5 | 195.0 | 172.3 | 172.1 | 172.1 | 165.2 | 187.1 | 174.6 |
| Maturity Ratio | .868 | 0.887 | 0.881 | 0.850 | 0.850 | 0.822 | 0.962 | 0.900 |
| S. A. NON-LINT CONTENT | | | | | | | | |
| Visible Waste (%) | 2.2 | 1.5 | 1.9 | 1.9 | 1.9 | 1.6 | 1.4 | 0.9 |
| Total Waste (%) | 3.1 | 2.3 | 2.8 | 2.8 | 2.8 | 2.8 | 2.2 | 1.9 |
| NEPS OF RAW COTTON | | | | | | | | |
| AFIS-N (neps/gram) | 371 | 318 | 410 | 377 | 377 | 338 | 340 | 412 |
| Raw Stock Neps (neps/100 sq. in.) | 21 | 19 | 38 | 29 | 29 | 27 | 24 | 32 |
| SUGAR CONTENT (%) | 0.23 | 0.22 | 0.21 | 0.27 | 0.27 | 0.43 | 0.32 | 0.29 |

*Stelometer results adjusted to Pressley level.

| | DELTAPINE 20 | | | | | | DELTAPINE 50 | | | | | |
|--|---------------|------|------|-----------|------|------|---------------|------|------|-----------|------|------|
| | SOUTH CENTRAL | | | SOUTHEAST | | | SOUTH CENTRAL | | | SOUTHEAST | | |
| | Mississippi | | | Tennessee | | | Alabama | | | Missouri | | |
| | 10s | 22s | 30s | 10s | 22s | 30s | 10s | 22s | 30s | 10s | 22s | 30s |
| OPENING & CARDING WASTE (%) | 9.05 | 9.05 | 9.05 | 8.96 | 8.96 | 8.96 | 9.20 | 9.20 | 9.20 | 9.69 | 9.69 | 9.69 |
| YARN SKEIN STRENGTH TEST: | | | | | | | | | | | | |
| Yarn Number (Ne) | 9.8 | 22.0 | 29.6 | 10.2 | 21.3 | 29.3 | 10.5 | 22.1 | 28.7 | 9.8 | 21.2 | 29.6 |
| CV% of Yarn Number | 0.9 | 1.5 | 1.2 | 1.0 | 1.3 | 1.4 | 1.2 | 1.6 | 1.4 | 1.2 | 1.5 | 1.4 |
| Count-Strength-Product | 2271 | 1842 | 1638 | 2088 | 1784 | 1570 | 2118 | 1754 | 1570 | 2366 | 2002 | 1765 |
| CV% of CSP | 2.7 | 2.4 | 2.7 | 2.7 | 2.6 | 3.6 | 3.4 | 2.2 | 2.0 | 3.4 | 3.2 | 3.8 |
| Elongation (%) | 7.8 | 6.8 | 6.3 | 7.4 | 7.2 | 6.2 | 7.5 | 6.6 | 6.4 | 7.3 | 7.2 | 6.5 |
| SINGLE-YARN STRENGTH TEST: | | | | | | | | | | | | |
| Elongation (%) | 7.85 | 6.90 | 6.37 | 7.66 | 7.01 | 6.04 | 8.04 | 7.39 | 6.76 | 7.43 | 6.59 | 6.30 |
| CV% of Elongation | 14.2 | 12.0 | 8.0 | 10.3 | 11.5 | 7.6 | 11.5 | 8.3 | 8.2 | 12.7 | 12.9 | 10.7 |
| Force (N) | 7.85 | 3.06 | 2.18 | 6.84 | 2.99 | 2.02 | 6.92 | 2.99 | 2.17 | 8.36 | 3.25 | 2.23 |
| Tenacity (mN/tex) | 133 | 114 | 111 | 116 | 111 | 102 | 117 | 111 | 110 | 142 | 121 | 113 |
| CV% of Tenacity | 16.3 | 11.2 | 10.6 | 16.1 | 11.9 | 8.5 | 11.5 | 11.0 | 10.0 | 17.1 | 12.5 | 10.2 |
| Specific Work to Rupture (cm*N) | 7.23 | 2.49 | 1.68 | 6.25 | 2.48 | 1.52 | 6.46 | 2.57 | 1.77 | 7.29 | 2.48 | 1.66 |
| CV% of Specific Work to Rupture | 8.2 | 6.4 | 6.0 | 8.3 | 6.7 | 4.7 | 7.8 | 6.2 | 5.6 | 9.4 | 7.6 | 6.0 |
| USTER YARN EVENNESS TEST: | | | | | | | | | | | | |
| Neps/1,000 yd | 6 | 4 | 40 | 3 | 11 | 45 | 3 | 2 | 37 | 32 | 5 | 30 |
| Thick Places/1,000 yd | 36 | 85 | 300 | 21 | 89 | 305 | 39 | 67 | 232 | 60 | 57 | 263 |
| Thin Places/1,000 yd | 0 | 19 | 233 | 1 | 31 | 187 | 1 | 23 | 123 | 1 | 6 | 136 |
| Non-Uniformity (CV%) | 12.6 | 14.3 | 17.6 | 12.6 | 14.6 | 17.4 | 12.6 | 14.2 | 16.8 | 12.7 | 13.8 | 16.9 |
| YARN APPEARANCE INDEX | 70 | 117 | 97 | 60 | 120 | 97 | 80 | 127 | 103 | 73 | 120 | 90 |

| | DELTAPINE 20 | | | | | | DELTAPINE 50 | | | | | |
|--|---------------|------|------|-----------|------|------|--------------|------|------|----------|------|------|
| | SOUTH CENTRAL | | | | | | SOUTHEAST | | | | | |
| | Mississippi | | | Tennessee | | | Alabama | | | Missouri | | |
| | 22s | 36s | 50s | 22s | 36s | 50s | 22s | 36s | 50s | 22s | 36s | 50s |
| OPENING & CARDING WASTE (%) | 9.05 | 9.05 | 9.05 | 8.96 | 8.96 | 8.96 | 9.20 | 9.20 | 9.20 | 9.89 | 9.89 | 9.89 |
| YARN SKEIN STRENGTH TEST: | | | | | | | | | | | | |
| Yarn Number (Ne) | 22.3 | 35.7 | 48.1 | 22.0 | 36.2 | 49.3 | 21.6 | 35.4 | 48.7 | 22.2 | 35.1 | 49.0 |
| CV% of Yarn Number | 1.1 | 1.8 | 1.3 | 1.2 | 1.2 | 2.2 | 1.5 | 1.4 | 1.7 | 1.4 | 1.1 | 1.2 |
| Count-Strength-Product | 2235 | 2063 | 1842 | 2094 | 1856 | 1647 | 2048 | 1897 | 1624 | 2304 | 2144 | 1927 |
| CV% of CSP | 3.3 | 3.8 | 3.7 | 3.6 | 3.8 | 4.9 | 4.1 | 4.6 | 4.1 | 3.1 | 3.7 | 3.2 |
| Elongation (%) | 7.4 | 6.5 | 5.6 | 7.0 | 6.0 | 5.4 | 6.9 | 6.2 | 4.8 | 6.3 | 6.0 | 5.5 |
| SINGLE-YARN STRENGTH TEST: | | | | | | | | | | | | |
| Elongation (%) | 6.67 | 5.60 | 5.94 | 6.23 | 5.54 | 5.81 | 6.89 | 6.17 | 6.13 | 6.58 | 5.59 | 5.83 |
| CV% of Elongation | 10.3 | 14.0 | 8.6 | 13.1 | 12.9 | 8.3 | 12.8 | 11.4 | 8.2 | 11.4 | 15.0 | 8.7 |
| Force (N) | 378 | 211 | 154 | 350 | 201 | 137 | 355 | 207 | 137 | 389 | 232 | 153 |
| Tenacity (mN/tex) | 141 | 128 | 94 | 130 | 123 | 84 | 132 | 126 | 84 | 145 | 142 | 93 |
| CV% of Tenacity | 9.9 | 13.3 | 7.8 | 12.2 | 15.3 | 6.4 | 12.2 | 12.4 | 7.1 | 11.0 | 14.1 | 7.4 |
| Specific Work to Rupture (cm*N) | 2.98 | 1.47 | 1.08 | 2.67 | 1.39 | 0.95 | 2.88 | 1.58 | 1.00 | 2.96 | 1.58 | 1.03 |
| CV% of Specific Work to Rupture | 15.8 | 22.3 | 4.8 | 20.8 | 20.1 | 4.2 | 20.9 | 19.2 | 4.4 | 18.2 | 23.2 | 4.6 |
| USTER YARN EVENNESS TEST: | | | | | | | | | | | | |
| Neps/1,000 yd | 39 | 455 | 719 | 38 | 390 | 774 | 65 | 566 | 1097 | 37 | 349 | 773 |
| Thick Places/1,000 yd | 895 | 1974 | 2560 | 1124 | 2068 | 2771 | 1278 | 2326 | 3151 | 837 | 1970 | 2569 |
| Thin Places/1,000 yd | 163 | 720 | 1501 | 278 | 861 | 1504 | 261 | 863 | 2000 | 145 | 787 | 1280 |
| Non-Uniformity (CV%) | 19.4 | 23.6 | 26.0 | 20.3 | 24.2 | 26.6 | 20.9 | 24.7 | 27.9 | 19.4 | 23.6 | 25.8 |
| YARN APPEARANCE INDEX | 120 | 60 | 60 | 117 | 60 | 60 | 117 | 60 | 60 | 120 | 60 | 60 |

| DELTAPINE 50 | | | | | | | | | | | | | |
|--|------|------|------|--------------------|-------|-------|-----------------------|------|------|----------------------|------|------|------|
| SOUTH CENTRAL | | | | | | | SOUTH WEST | | | | | | |
| Arkansas | | | | Mississippi | | | Texas | | | | | | |
| 10s | 22s | 30s | | 10s | 22s | 30s | (Abilene Area) | | | (Corpus Area) | | | |
| | | | | | | | 10s | 22s | 30s | 10s | 22s | 30s | |
| OPENING & CARDING WASTE (%) | | | | | | | | | | | | | |
| 7.93 | 7.93 | 7.93 | 7.93 | 11.39 | 11.39 | 11.39 | 8.55 | 8.55 | 8.55 | 7.83 | 7.83 | 7.83 | 7.83 |
| YARN SKEIN STRENGTH TEST: | | | | | | | | | | | | | |
| Yarn Number (Ne) | | | | | | | | | | | | | |
| 10.1 | 21.9 | 29.4 | | 10.2 | 21.4 | 29.6 | 9.7 | 22.2 | 29.5 | 9.9 | 22.5 | 29.8 | |
| 0.8 | 1.2 | 1.6 | | 0.9 | 1.3 | 1.3 | 1.1 | 1.2 | 1.3 | 1.3 | 1.4 | 1.4 | |
| 2328 | 1958 | 1775 | | 2182 | 1795 | 1621 | 2208 | 1807 | 1584 | 2249 | 1856 | 1606 | |
| 3.2 | 3.8 | 3.3 | | 3.4 | 3.5 | 5.0 | 3.3 | 4.2 | 4.0 | 3.5 | 3.2 | 4.2 | |
| 7.2 | 6.6 | 6.5 | | 7.4 | 7.2 | 6.5 | 6.6 | 6.0 | 5.6 | 7.0 | 6.0 | 5.6 | |
| SINGLE-YARN STRENGTH TEST: | | | | | | | | | | | | | |
| Elongation (%) | | | | | | | | | | | | | |
| 7.30 | 7.23 | 6.42 | | 6.95 | 6.54 | 5.77 | 6.08 | 5.90 | 5.34 | 6.39 | 6.04 | 5.44 | |
| 15.3 | 12.5 | 7.3 | | 14.7 | 8.5 | 8.8 | 9.3 | 9.6 | 10.1 | 14.2 | 10.2 | 8.4 | |
| 7.91 | 3.20 | 2.26 | | 7.27 | 3.28 | 2.02 | 7.75 | 2.94 | 2.06 | 7.68 | 2.99 | 2.06 | |
| 134 | 119 | 115 | | 123 | 122 | 103 | 131 | 110 | 105 | 130 | 111 | 105 | |
| 19.1 | 12.5 | 9.3 | | 17.0 | 3.9 | 8.3 | 13.2 | 9.9 | 9.8 | 12.3 | 10.2 | 8.2 | |
| 6.90 | 2.62 | 1.74 | | 6.09 | 2.51 | 1.44 | 5.73 | 2.05 | 1.35 | 5.87 | 2.10 | 1.36 | |
| 10.0 | 7.0 | 5.0 | | 9.5 | 3.6 | 5.1 | 7.4 | 5.7 | 5.9 | 7.6 | 6.3 | 5.0 | |
| USTER YARN EVENNESS TEST: | | | | | | | | | | | | | |
| Neps/1,000 yd | | | | | | | | | | | | | |
| 8 | 4 | 28 | | 1 | 8 | 38 | 2 | 6 | 21 | 3 | 2 | 17 | |
| 38 | 49 | 236 | | 42 | 64 | 246 | 36 | 83 | 231 | 28 | 66 | 211 | |
| 0 | 6 | 130 | | 0 | 22 | 155 | 0 | 24 | 140 | 0 | 12 | 127 | |
| 12.6 | 13.6 | 16.8 | | 12.7 | 14.3 | 17.1 | 13.0 | 14.6 | 17.2 | 12.3 | 14.2 | 16.8 | |
| YARN APPEARANCE INDEX | | | | | | | | | | | | | |
| 60 | 120 | 97 | | 87 | 120 | 100 | 73 | 120 | 110 | 60 | 127 | 110 | |

DELTAPINE 50

| | SOUTH CENTRAL | | | | | | SOUTH WEST | | | | | |
|--|---------------|------|------|-------------|-------|-------|----------------|------|------|---------------|------|------|
| | Arkansas | | | Mississippi | | | Texas | | | | | |
| | | | | | | | (Abilene Area) | | | (Corpus Area) | | |
| | 22s | 36s | 50s | 22s | 36s | 50s | 22s | 36s | 50s | 22s | 36s | 50s |
| OPENING & CARDING WASTE (%) | 7.93 | 7.93 | 7.93 | 11.39 | 11.39 | 11.39 | 8.55 | 8.55 | 8.55 | 7.83 | 7.83 | 7.83 |
| YARN SKEIN STRENGTH TEST: | | | | | | | | | | | | |
| Yarn Number (Ne) | 22.1 | 34.8 | 49.2 | 21.8 | 36.1 | 48.0 | 21.5 | 36.3 | 49.0 | 21.8 | 36.1 | 48.6 |
| CV% of Yarn Number | 1.7 | 1.4 | 1.0 | 1.0 | 1.7 | 2.0 | 1.4 | 1.4 | 1.3 | 0.8 | 1.2 | 1.9 |
| Count-Strength-Product | 2267 | 2184 | 1878 | 2174 | 1951 | 1678 | 2105 | 1789 | 1550 | 2138 | 1913 | 1673 |
| CV% of CSP | 2.6 | 2.9 | 4.5 | 3.1 | 5.3 | 4.5 | 4.4 | 4.2 | 3.6 | 4.6 | 3.7 | 5.5 |
| Elongation (%) | 6.7 | 6.5 | 5.3 | 6.9 | 6.3 | 5.3 | 6.4 | 5.0 | 4.5 | 6.2 | 5.0 | 4.8 |
| SINGLE-YARN STRENGTH TEST: | | | | | | | | | | | | |
| Elongation (%) | 6.83 | 5.99 | 5.82 | 6.21 | 5.44 | 5.42 | 5.57 | 4.38 | 4.55 | 5.90 | 5.57 | 5.24 |
| CV% of Elongation | 13.5 | 14.8 | 8.3 | 17.7 | 14.6 | 8.2 | 10.4 | 15.2 | 3.4 | 12.5 | 11.7 | 8.2 |
| Force (N) | 4.15 | 2.33 | 1.56 | 3.70 | 2.05 | 1.44 | 3.55 | 1.92 | 1.37 | 3.76 | 2.25 | 1.43 |
| Tenacity (mN/tex) | 154 | 142 | 95 | 138 | 125 | 88 | 132 | 117 | 84 | 140 | 137 | 87 |
| CV% of Tenacity | 10.1 | 12.2 | 8.2 | 12.5 | 11.1 | 7.2 | 11.1 | 13.2 | 5.8 | 10.6 | 10.3 | 8.2 |
| Specific Work to Rupture (cm*N) | 3.25 | 1.69 | 1.07 | 2.71 | 1.37 | 0.93 | 2.33 | 1.08 | 0.81 | 2.57 | 1.53 | 0.86 |
| CV% of Specific Work to Rupture | 18.0 | 21.7 | 5.1 | 22.8 | 19.2 | 3.2 | 18.8 | 22.8 | 3.7 | 18.0 | 16.8 | 5.0 |
| USTER YARN EVENNESS TEST: | | | | | | | | | | | | |
| Neps/1,000 yd | 34 | 306 | 853 | 20 | 463 | 873 | 67 | 367 | 990 | 67 | 626 | 1107 |
| Thick Places/1,000 yd | 950 | 2070 | 2966 | 605 | 2279 | 2805 | 1812 | 2028 | 3229 | 1608 | 2709 | 3470 |
| Thin Places/1,000 yd | 146 | 782 | 1828 | 132 | 863 | 1457 | 569 | 943 | 2047 | 333 | 1290 | 2187 |
| Non-Uniformity (CV%) | 19.7 | 23.9 | 27.1 | 20.7 | 24.7 | 26.5 | 22.8 | 20.3 | 28.5 | 21.9 | 26.3 | 29.1 |
| YARN APPEARANCE INDEX | 117 | 60 | 60 | 123 | 60 | 60 | 103 | 60 | 60 | 113 | 60 | 60 |

Fiber and Processing Tests of Leading Cotton Varieties - 1994 Cotton Crop - Fiber Properties.

| | PIMA S-7 | |
|--|---|---|
| | FAR WEST | |
| | Arizona | California |
| CLASSIFICATION Classer's Grade (code) HVI Staple (code) | 3 46 | 3 46 |
| HVI - SPINLAB UHM (in) Uniformity Index (%) Strength (g/tex) Micronaire (rdg) Color Rd (%) Color +b (units) | 1.35 86.6 38.8 4.06 67.4 11.52 | 1.35 85.6 38.6 3.84 68.0 11.90 |
| STELOMETER 1/8" - Gage Strength (g/tex)* Elongation (%) | 28.8 6.7 | 27.5 7.5 |
| SUTER-WEBB LENGTH ARRAY UQL (in) Mean Length (in) CV (%) Short Fiber Content (%) | 1.50 1.26 27.6 5.3 | 1.51 1.27 27.3 5.2 |
| IIC/SHIRLEY FMT Fineness (mtex) Maturity Ratio | 141.5 1.020 | 136.8 1.002 |
| S. A. NON-LINT CONTENT Visible Waste (%) Total Waste (%) | 2.0 3.3 | 1.7 3.1 |
| NEPS OF RAW COTTON AFIS-N (neps/gram) Raw Stock Neps (neps/100 sq. in.) | 269 33 | 213 26 |
| SUGAR CONTENT (%) | 0.21 | 0.34 |

*Stelometer results adjusted to Pressley level.

| | PIMA S-7 | | | | | |
|--|----------|-------|-------|------------|------|------|
| | FAR WEST | | | | | |
| | Arizona | | | California | | |
| | 22s | 36s | 50s | 22s | 36s | 50s |
| OPENING & CARDING WASTE (%) | 15.41 | 15.41 | 15.41 | 6.57 | 6.57 | 6.57 |
| YARN SKEIN STRENGTH TEST: | | | | | | |
| Yarn Number (Ne) | 22.0 | 36.4 | 50.2 | 22.4 | 37.3 | 50.8 |
| CV% of Yarn Number | 2.7 | 4.0 | 2.5 | 2.1 | 4.4 | 1.9 |
| Count-Strength-Product | 4218 | 3909 | 3556 | 4187 | 3986 | 3676 |
| CV% of CSP | 3.0 | 2.9 | 3.6 | 3.1 | 4.1 | 2.6 |
| Elongation (%) | 6.5 | 5.5 | 5.1 | 6.2 | 5.9 | 5.2 |
| SINGLE-YARN STRENGTH TEST: | | | | | | |
| Elongation (%) | 5.88 | 5.15 | 5.05 | 6.34 | 5.40 | 5.01 |
| CV% of Elongation | 8.9 | 8.4 | 9.2 | 8.5 | 9.3 | 8.6 |
| Force (N) | 7.03 | 4.08 | 2.67 | 7.11 | 3.92 | 2.67 |
| Tenacity (mN/tex) | 262 | 249 | 163 | 265 | 239 | 163 |
| CV% of Tenacity | 9.1 | 11.0 | 9.1 | 10.4 | 11.9 | 8.8 |
| Specific Work to Rupture (cm*N) | 4.35 | 2.35 | 1.51 | 4.67 | 2.36 | 1.54 |
| CV% of Specific Work to Rupture | 13.9 | 16.7 | 5.9 | 15.6 | 17.3 | 5.8 |
| USTER YARN EVENNESS TEST: | | | | | | |
| Neps/1,000 yd | 7 | 11 | 122 | 13 | 29 | 256 |
| Thick Places/1,000 yd | 20 | 27 | 200 | 29 | 53 | 676 |
| Thin Places/1,000 yd | 2 | 3 | 70 | 1 | 6 | 225 |
| Non-Uniformity (CV%) | 12.1 | 14.4 | 16.2 | 12.4 | 14.3 | 17.1 |
| YARN APPEARANCE INDEX | 130 | 113 | 97 | 127 | 117 | 97 |

Standard Machine Settings and Specifications for Processing Specified Groups of Cotton.

| Process | U.S. Upland | U.S. Upland (Combed) | American Pima |
|---|-------------|-------------------------|---------------|
| CARD | | | |
| Standard Atmospheric Conditions | | | |
| Temperature (degrees F.) | 75 | 75 | 75 |
| Relative Humidity (pct.) | 55 | 55 | 55 |
| Sliver Delivered (gr./yd.) | 60 | 60 | 60 |
| Production Rate Per Hour (lbs.) | 70 | 70 | 70 |
| Doffer Speed (r.p.m.) | 42 | 42 | 42 |
| Cylinder Speed (r.p.m.) | 365 | 365 | 365 |
| Flat Speed (in./min.) | 5 | 5 | 5 |
| Licker-In Speed (r.p.m.) | 942 | 942 | 942 |
| Settings: | | | |
| Feed Plate to Licker-In (in.) | 0.008 | 0.008 | 0.008 |
| Mote Knife to Licker-In (in.) | 0.012 | 0.012 | 0.012 |
| Licker-In Screen to Cylinder (in.) | 0.007 | 0.007 | 0.007 |
| Back Cylinder Screen, Top (in.) | 0.023 | 0.023 | 0.023 |
| Back Cylinder Screen, Bottom (in.) | 0.038 | 0.038 | 0.038 |
| Front Cylinder Screen, Top (in.) | 0.120 | 0.120 | 0.120 |
| Front Cylinder Screen, Bottom (in.) | 0.036 | 0.036 | 0.036 |
| Flats, Back (in.) | 0.008 | 0.008 | 0.008 |
| Flats, Mid (in.) | 0.008 | 0.008 | 0.008 |
| Flats, Front (in.) | 0.008 | 0.008 | 0.008 |
| Flats Stationary Back (3) (in.) | 0.010 | 0.010 | 0.010 |
| Flats Stationary Front (3) (in.) | 0.010 | 0.010 | 0.010 |
| Front Knife, Top (in.) | 0.010 | 0.010 | 0.010 |
| Front Knife, Bottom (in.) | 0.010 | 0.010 | 0.010 |
| Back Knife (in.) | 0.050 | 0.050 | 0.050 |
| Top Front Plate to Cylinder (in.) | 0.040 | 0.040 | 0.040 |
| Doffer to Cylinder (in.) | 0.004 | 0.004 | 0.004 |
| Doffer to Stripper Roll (in.) | 0.005 | 0.005 | 0.005 |
| Stripper to Crush Rolls (in.) | 0.008 | 0.008 | 0.008 |
| Crusher Roll Pressure (lbs.) | 112 | 112 | 112 |

Standard Machine Settings and Specifications for Processing Specified Groups of Cotton.

| Process | U.S. Upland | U.S. Upland (Combed) | American Pima |
|--|-------------|-------------------------|---------------|
| Standard Atmospheric Conditions | | | |
| Temperature (degrees F.) | 75 | 75 | 75 |
| Relative Humidity (pct.) | 55 | 55 | 55 |
| Sliver Lapper (Combed Only) | | | |
| Sliver Fed, 20 Each. (gr./yd.) | - | 42 | 42 |
| Lap Delivered (gr./yd.) | - | 808 | 808 |
| Speed (yd./min.) | - | 46 | 46 |
| Comber (Model 52) | | | |
| Sliver Delivered (gr./yd.) | - | 50 | 40 |
| Production Per Hour (lbs.) | - | 22 | 22 |
| Nominal Waste (pct.) | - | 16 to 17 | 16 to 17 |
| Breaker Drawing Frame (3 over 3) | | | |
| Sliver Fed (6 Each) (gr. /yd.) | 60 | 60 | 60 |
| Sliver Delivered (gr. /yd.) | 53 | 53 | 53 |
| Roll Settings: | | | |
| First to Second (mm.) | 36 | 36 | 39 |
| Second to Third (mm.) | 40 | 40 | 42 |
| Speed (meters / min.) | 350 | 350 | 350 |
| Finisher Drawing Frame (3 over 4) | | | |
| Sliver Fed (8 Each) (gr. /yd.) | 53 | 53 | 53 |
| Sliver Delivered (gr. /yd.) | 55 | 55 | 55 |
| Roll Settings: | | | |
| First to Third (in.) | 2-9/16 | 2-9/16 | 2-5/8 |
| Third to Fourth (in.) | 1-1/2 | 1-1/2 | 1-7/8 |
| Speed (feet / min.) | 524 | 315 | 315 |

| Process | U.S. Upland | U.S. Upland (Combed) | American Pima |
|---|------------------|-------------------------|------------------|
| Long Draft Roving (10 X 5, 1-Apron Type) | | | |
| Standard Atmospheric Conditions: | | | |
| Temperature (degrees F.) | 75 | 75 | 75 |
| Relative Humidity (pct.) | 60 | 60 | 60 |
| Sliver Fed (gr. / yd.) | 55 | 55 | 55 |
| Roving Delivered (hank) | 0.80, 1.00, 1.25 | 0.80, 1.00, 1.25 | 0.80, 1.00, 1.25 |
| Roll Settings: | | | |
| First to Second (in.) | 2-3/32 | 2-3/32 | 2-1/4 |
| Second to Third (in.) | 1-1/2 | 1-1/2 | 2 |
| Spindle Speed (r.p.m.) | 900 | 900 | 900 |
| Long Draft Spinning (2-Apron Type) | | | |
| Standard Atmospheric Conditions: | | | |
| Temperature (degrees F.) | 75 | 75 | 75 |
| Relative Humidity (pct.) | 65 | 65 | 65 |
| Twist Multiplier (no.) | 4.00 | 4.00 | 4.00 |
| Carded Yarns (no.) | 22, 36, 50 | - | - |
| Combed Yarns (no.) | - | 22, 36, 50 | 22, 36, 50 |
| Roll Settings: | | | |
| First to Second (in.) | 1-11/16 | 1-11/16 | 1-11/16 |
| Second to Third (in.) | 1-13/16 | 1-13/16 | 2 |
| Spindle Speed (r.p.m.) | 11,000 | 11,000 | 11,000 |
| Open-End Spinning | | | |
| Standard Atmospheric Conditions: | | | |
| Temperature (degrees F.) | 75 | - | - |
| Relative Humidity (pct.) | 65 | - | - |
| Sliver Fed (gr. / yd.) | 55 | - | - |
| Twist Multiplier (no.) | 4.80 | - | - |
| Carded Yarns (no.) | 10, 22, 30 | - | - |
| Rotor Speed (r.p.m.) | 90,000 | - | - |
| Rotor Diameter (mm.) | T33 | - | - |
| Opening Roll Speed (r.p.m.) | 7,500 | - | - |

OUTLINE OF MECHANICAL PROCESSES



